APRIL/MAY 2024

23UBT21 — GENETICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is test cross? Give example.
2. Define lethal genes.
3. What is incomplete dominance? Give its ratio and example.
4. Define interference and coincidence.
5. Define gene.
6. What is conjugation?
7. What is cystic fibrosis and its causes?
8. Define karyotyping.
9. Define euthenics.
10. What is population genetics?

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write about Mendelian's law of inheritance?

Or

(b) Explain multiple alleles with example.

12. (a) Define linkage. What are the factors affecting linkage?

Or

(b) Explain the mechanisms and types of crossing-over.

13. (a) Discuss: Ultrastructure of gene.

Or

(b) Write about transformation and transduction?

14. (a) Explain mutations and its types.

Or

(b) What are chromosomal aberrations? Discuss its types.

15. (a) Explain Hardy-Weinberg principle.

Or

(b) What is penetrance and expressivity?

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Demonstrate monohybrid and dihybrid cross with punnet square.

17. Explain sex-linked inheritance with two examples.

18. Discuss an experiment which proves "DNA as a genetic materials".

19. Explain about DNA damage and their repair mechanism.

20. Define gene frequency and genotype frequency. What are the factors affecting gene frequency?

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